2241B
Data Logger

Instruction Manual

P/N 469775
August 1977

FLUKE®

WARRANTY

Notwithstanding any provision of any agreement the following warranty is exclusive:

The JOHN FLUKE MFG. CO., INC., warrants each instrument it manufactures to be free from defects in material and workmanship under normal use and service for the period of 1-year from date of purchase. This warranty extends only to the original purchaser. This warranty shall not apply to fuses, disposable batteries (rechargeable type batteries are warranted for 90-days), or any product or parts which have been subject to misuse, neglect, accident, or abnormal conditions of operations.

In the event of failure of a product covered by this warranty, John Fluke Mfg. Co., Inc., will repair and calibrate an instrument returned to an authorized Service Facility within 1 year of the original purchase; provided the warrantor's examination discloses to its satisfaction that the product was defective. The warrantor may, at its option, replace the product in lieu of repair. With regard to any instrument returned within 1 year of the original purchase, said repairs or replacement will be made without charge. If the failure has been caused by misuse, neglect, accident, or abnormal conditions of operations, repairs will be billed at a nominal cost. In such case, an estimate will be submitted before work is started, if requested.

THE FOREGOING WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS, OR ADEQUACY FOR ANY PARTICULAR PURPOSE OR USE. JOHN FLUKE MFG. CO., INC., SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER IN CONTRACT, TORT, OR OTHERWISE.

If any failure occurs, the following steps should be taken:

1. Notify the JOHN FLUKE MFG. CO., INC., or nearest Service facility, giving full details of the difficulty, and include the model number, type number, and serial number. On receipt of this information, service data, or shipping instructions will be forwarded to you.

2. On receipt of the shipping instructions, forward the instrument, transportation prepaid. Repairs will be made at the Service Facility and the instrument returned, transportation prepaid.

SHIPPING TO MANUFACTURER FOR REPAIR OR ADJUSTMENT

All shipments of JOHN FLUKE MFG. CO., INC., instruments should be made via United Parcel Service or "Best Way" prepaid. The instrument should be shipped in the original packing carton; or if it is not available, use any suitable container that is rigid and of adequate size. If a substitute container is used, the instrument should be wrapped in paper and surrounded with at least four inches of excelsior or similar shock-absorbing material.

CLAIM FOR DAMAGE IN SHIPMENT TO ORIGINAL PURCHASER

The instrument should be thoroughly inspected immediately upon original delivery to purchaser. All material in the container should be checked against the enclosed packing list. The manufacturer will not be responsible for shortages against the packing sheet unless notified immediately. If the instrument is damaged in any way, a claim should be filed with the carrier immediately. (To obtain a quotation to repair shipment damage, contact the nearest Fluke Technical Center.) Final claim and negotiations with the carrier must be completed by the customer.

The JOHN FLUKE MFG. CO., INC, will be happy to answer all applications or use questions, which will enhance your use of this instrument. Please address your requests or correspondence to: JOHN FLUKE MFG. CO., INC., P.O. BOX 43210, MOUNTLAKE TERRACE, WASHINGTON 98043, ATTN: Sales Dept. For European Customers: Fluke (Holland) B.V., P.O. Box 5053, 5004 EB, Tilburg, The Netherlands.

*For European customers, Air Freight prepaid.

John Fluke Mfg. Co., Inc., P.O. Box 43210, Mountlake Terrace, Washington 98043

Rev. 4/80

Addendum

SCOPE

This document supplements and, thereby, modifies the 2240B Instruction Manual to cover the operation and maintenance of the Model 2241B Data Logger. The supplemental data is presented in the form of additions, deletions and/or changes, and follows the same sequential arrangement (Section, paragraph, etc.) as that of the 2240B manual. In all cases the affected data and its location is presented in specific terms. However, any given changes within the specified material may only be implied. For example, "In Section 2, Operating Notes, Print/Record Format, delete all reference to the internal printer". Notice that specific reference is made to both the paragraph locations and the material (all mention of the internal printer) to be deleted. However, specific word and/or sentence changes within the paragraphs are only implied and require reasonable judgement on the part of the user. All data in the 2240B manual that is not affected by this supplement applies directly to the 2241B. Therefore, throughout the 2240B manual change 2240B to read 2241B.

Section 1

Introduction & Specifications

INTRODUCTION

The model 2241B Data Logger is identical to the 2240B Data Logger with one exception; all internal printing/recording capability has been removed from the 2241B. Therefore, in the introductory paragraphs delete all reference to internal recording capability, internal digital printer, print head (Seik Model 102), and the program list feature/switch. Also in Table 1-3 (2240B Accessories) delete model numbers 2010A-7013 and 2010A-7014, and their description and function.

SPECIFICATIONS

In Table 1-4 (2240B Specifications) make the following changes:

Output Controls - Delete reference to internal printer. PRINTER ENABLE controls are not functional

Program List - Delete all reference to program-list function and switch.

Digital Printer - Delete reference to printer and printer specifications.

In Figure 1-1 change left 1/3 of front panel to indicate absence of internal printer.

Section 2
Operating Instructions

OPERATING FEATURES

Change Figure 2-2 to agree with Figure 1 of this supplement.

Table 2-1 should be changed as follows:

Under Ref. No. 4 - OUTPUT CONTROL switches, delete all reference to an internal recorder/printer. Also indicate that PRINTER ENABLE switches are not functional.

Under Ref. No. 10 - PROGRAM LIST switch, change description to read "not functional".

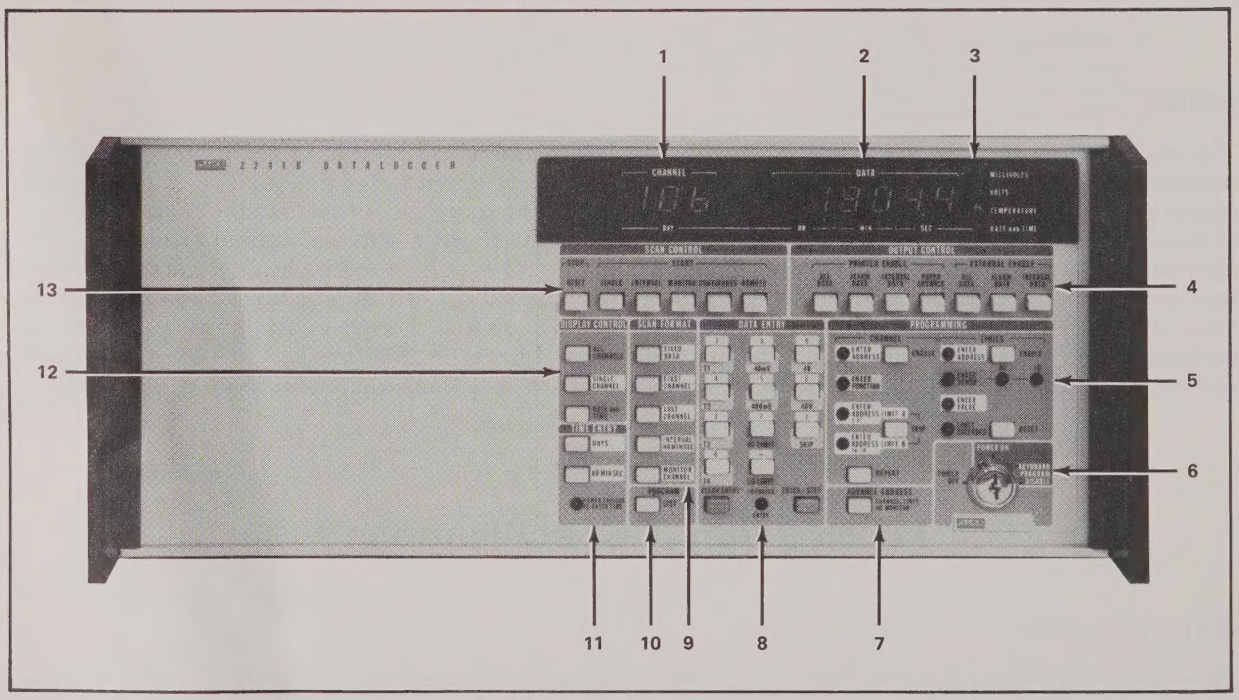

Figure 1. 2241B Controls and Indicators

OPERATING NOTES

Printer Paper Installation

Delete Printer Paper Installation heading and all information under that heading.

Printer Ribbon Installation

Delete Printer Ribbon Installation heading and all information under that heading, including Figures 2-3 (Properly Installed Ribbon) and 2-4 (Threading Direction for Ribbon Spools).

Option Information

In Figure 2-5 (2240B Option Installation Locations) delete PRINTER from the drawing and change PRINTER DRIVE PCB to read MODE SWITCH INTERFACE PCB.

Output Control

Delete all reference to an internal printer and indicate that the PRINTER ENABLE switches are not functional.

Delete note referring to the program list feature.

Print/Record Format

Delete Figure 2-6

Change paragraph to read:

> Measurement data generated during a scan sequence can be recorded on an external recording device that is properly interface with the 2241B. Refer to Section 1 of this manual for a list of the available interfaces.

Programmable Limits

Delete reference to internal printer and red print to indicate an out-of-limits condition.

Program List

Delete Figure 2-7.

Delete Program List heading and all paragraphs/notes under it.

OPERATION

Turn-On Procedure

Delete steps f. and g.

Section 3

Theory of Operation

OVERALL FUNCTIONAL DESCRIPTION

In Figure 3-1 change PRINTER DRIVER to MODE SWITCH INTERFACE.

In Table 3-1, Control Bus A, delete the entries referring to the printer, i.e.; 0101, Printer Receive; 1101, Printer/Interval Status.

Delete from text, all reference to the internal printer and the printer interrupt capability.

BLOCK DIAGRAM DESCRIPTION

Introduction

In Figure 3-2 change PRINTER DRIVE title to read MODE SWITCH INTERFACE. Also delete the IRQ U9 output from the PRINTER DRIVE.

Controller PCB Assembly

INTERRUPT CIRCUIT

Delete all reference to the printer interrupt capability.

Printer Drive PCB Assembly

Delete Printer Drive PCB Assembly and all paragraphs under it.

Delete Figure 3-8, Printer Drive Simplified Block Diagram.

Section 4
Maintenance

GENERAL MAINTENANCE

Access Information

SEIKO MODEL 102 PRINTER HEAD

Delete Seiko Model 102 Printer Head heading and all information under that heading.

Cleaning

SEIKO MODEL 102 PRINTER HEAD

Delete Seiko Model 102 Printer Head heading and all information under that heading.

Lubrication

Delete the Lubrication heading and all information under that heading, including Figure 4-1 (Lubrication Chart).

PERFORMANCE TEST

Procedure

In step g. delete reference to ALL DATA switch in the PRINTER ENABLE group.

Channel Programming Test

Make the following changes to the procedural steps of the Channel Programming Test:

a. Delete

b. Press the ENABLE switch in the CHANNEL PROGRAMMING group and enter a channel number of 0 (zero). Press the ENTER/STEP switch. The ENTER FUNCTION lamp should light.

d. Press the ADVANCE ADDRESS switch.

Delete Note

f. Repeat steps d. and e. of this procedure for all channels up to, and including channel 59

g. Delete

n. Repeat step b.

o. Verify that channels 0, 4, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, and 55 have been programmed for a function of 4V, and that the function for all other channels through 59 is programmed to skip. Verification is accomplished by pressing the ADVANCE ADDRESS switch after verifying the function for each channel.

p. Set the Power switch to POWER OFF for 1 minute and then set it to POWER ON.

q. Repeat steps n. and o. Program data should not change.

Scan Control Test

Delete step i. from the Scan Control Test Procedure.

Output Control Test

Delete the Output Control Test heading and all information under it.

Display Control Test

Delete step a. from the Display Control Test Procedure.

TROUBLESHOOTING

Make the following changes to Table 4-3 (Troubleshooting).

In step 5, go-to column, change 6 to 7.

Delete step 6 and its instructions.

In step 76, go-to column, change 77 to 96.

Delete steps 77 through 95

In step 100, yes column, change 102 to 106.

Delete PROGRAM LIST and steps 102 through 105.

Section 5

List of Replaceable Parts

TABLE OF CONTENTS

Change A5 name and part no.

from:	Printer Drive PCB Assembly	409482
to:	Mode Switch Interface PCB Assembly	462929

FINAL ASSEMBLY

Change 2240B Final Assembly parts list to agree with Figure 2.

Change Figure 5-1 (1 of 2) to agree with Figure 3.

A5 PRINTER DRIVE PCB ASSEMBLY

Delete A5 Printer Drive PCB Assembly parts list and replace with Mode Switch Interface PCB Assembly parts list, as shown in Figure 4.

Section 6

Option & Accessory Information

FAN-FOLD PRINTER PAPER (2010-7013)

Delete Fan-Fold Paper (2010-7013) heading and all information under it.

PRINTER RIBBON (2010-7014)

Delete Printer Ribbon (2010-7014) heading and all information under it.

REF DESIG OR ITEM NO.	DESCRIPTION	FLUKE STOCK NO.	MFG FED SPLY CDE	MFG PART. NO. OR TYPE	TOT QTY	REC QTY	USE CDE
	FINAL ASSEMBLY MODEL 2241B Figure 5-1.						
A1	Mother Board PCB Assembly, tested (2200A-4001T) Figure 8-2	409425	89536	409425	1		
A2	Power Supply PCB Assembly (Standard) (2200A-4002T) Figure 8-3	409433	89536	409433	1		
A2	Power Supply PCB Assembly (100V Model) (2200A-4018T) Figure 8-3	426676	89536	426676	1		
A3	Controller PCB Assembly, tested (2200A-4003T) Figure 8-4	409441	89536	409441	1		
A4	Guard Crossing PCB Assembly (Standard) tested (2200A-4004T) Figure 8-12	409458	89536	409458	1		
A5	Mode Switch Interface PCB Assy (2241B-4007) Figure 8-5	462929	89536	462929	1		
A6	Display PCB Assembly, tested (2240A-4008T) Figure 8-6	409656	89536	409656	1		
A7	Mode Switch PCB Assembly, tested (2240A-4009T) Figure 8-7	409664	89536	409664	1		
A8	Keyboard Switch PCB Assembly (2240A-4011T) Figure 8-8	409672	89536	409672	1		
A9	Keyboard Logic PCB Assembly (2240A-4012T) Figure 8-9	409680	89536	409680	1		
A10	Keyboard Memory PCB Assembly (2240A-4013T) Figure: 8-10	409698	89536	409698	1		
A11	Range and Function Memory PCB Assembly (2240A-4032T) Figure 8-11	412445	89536	412445	1		
F1	Fuse				1		
	Slo-blo, 3/4 A	109256	89536	109256			
	Slo-blo, 3/8 A (use with 230V/50 Hz)	109264	89536	109264			
S1	Switch, power (on keyboard bracket)	417204	89536	417204	1		
U3	IC, CMOS, ROM, control (located on Controller PCB) ⊗	429118	89536	429118	1		
U4	IC, CMOS, ROM, keyboard (located on Controller PCB) ⊗	429126	89536	429126	1		
XF1	Fuse Holder	424416	89536	424416	1		

Figure 2. 2241B Final Assembly

2241B Final Assembly (Continued)

REF DESIG OR ITEM NO.	DESCRIPTION	FLUKE STOCK NO.	MFG FED SPLY CDE	MFG PART. NO. OR TYPE	TOT QTY	REC QTY	USE CDE
Y1	*Crystal, quartz				1		
	2.4 MHz (use with 60 Hz line)	408153	89536	408153			
	2.0 MHz (use with 50 Hz line)	408161	89536	408161			
1	Bail, full width	231407	89536	231407	1		
2	Bracket, isothermal	411728	89536	411728	1		
3	Bracket, printer	412254	89536	412254	1		
4	Bracket, trim support	411694	89536	411694	1		
5	Bulkhead, unguarded	411678	89536	411678	1		
6	Bushing, nylon (for printer mechanism cable)	104620	28520	SB500-6	1		
8	Cable assy	413344	32038	5132-010	4		
9	Cable assy	380576	32038	5122-003.5	1		
10	Cable assy	380568	32038	5112-003.25	1		
11	Card guide	256461	23880	1450F	17		
12	Chassis, left side	412239	89536	412239	1		
13	Chassis, right side	412247	89536	412247	1		
14	Corner, machined	423814	89536	423814	2		
15	Cover, bottom	412288	89536	412288	1		
16	Cover, guard chamber	411645	89536	411645	1		
17	Cover, rear	409623	89536	409623	1		
18	Cover, top	412270	89536	412270	1		
19	Cover, unguarded	411686	89536	411686	1		
20	Decal, corner	296277	89536	296277	4		
21	Decal, front panel	454397	89536	454397	1		
22	Decal, handle trim	295501	89536	295501	2		
23	Decal, nameplate	416917	89536	416917	1		
25	Decal, rear panel	419358	89536	419358	1		
	*Located on guard crossing PCB assembly.						

Figure 2. 2241B Final Assembly (Continued)

2241B Final Assembly (Concluded)

REF DESIG OR ITEM NO.	DESCRIPTION	FLUKE STOCK NO.	MFG FED SPLY CDE	MFG PART. NO. OR TYPE	TOT QTY	REC QTY	USE CDE
26	Decal, rear panel, caution	428201	89536	428201	1		
27	Decal, side trim	295402	89536	295402	2		
28	Display lens	414334	89536	414434	1		
30	Foot, bail stand	292870	89536	292870	4		
31	Guard, bracket	411736	89536	411736	1		
32	Guard, chamber	411611	89536	411611	1		
33	Handle	423053	89536	423053	2		
36	Lock, key operated	417543	89536	417543	1		
37	Panel, front	462788	89536	462788	1		
38	Panel, rear	412221	89536	412221	1		
	Card guide (short guides located on Mother Board)	298836	89536	298836	21		
	Guard, plane (located on bottom of Mother Board)	411637	89536	411637	1		
	Line cord	343723	89536	343723	1		
	Power switch cable (connects to power supply)	374009	89536	374009	1		
	Power cable (from rear panel line cord connector)	398115	89536	398115	1		
	Power switch cable (connects to power cable)	419952	89536	419952	1		

Figure 2. 2241B Final Assembly (Concluded)

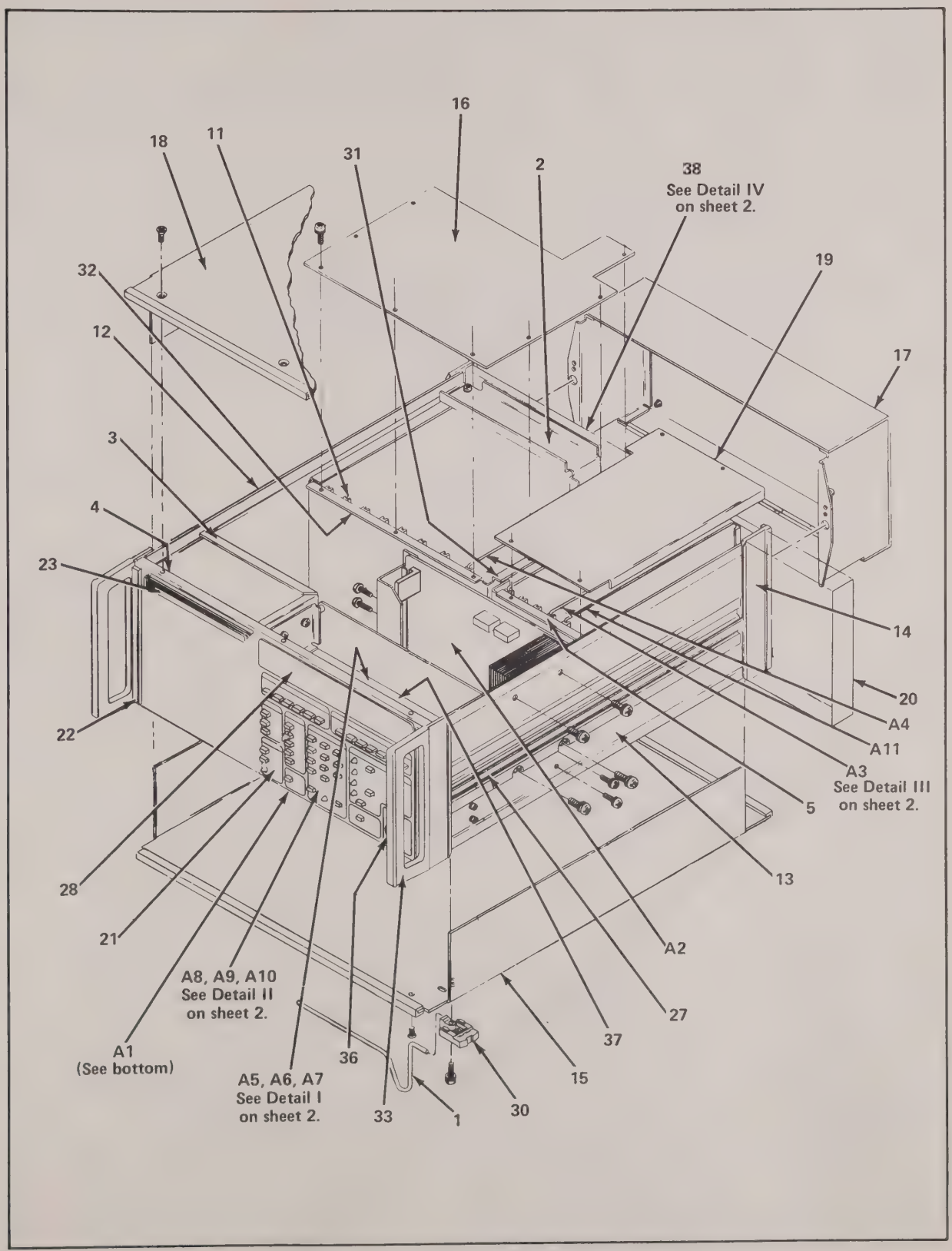

Figure 3. 2241B Final Assembly (Sheet 1 of 2)

REF DESIG OR ITEM NO.	DESCRIPTION	FLUKE STOCK NO.	MFG FED SPLY CDE	MFG PART. NO. OR TYPE	TOT QTY	REC QTY	USE CDE
	MODE SWITCH INTERFACE PCB ASSEMBLY (2241B-4007) Figure 8-5						
J6	Socket, IC, 14-pin DIP	387316	71785	133-59-02-059		1	
P41	Connector, male, 15-pin	424135	27264	09-64-1152		1	

Figure 4. Mode Switch Interface PCB Assembly

Option -05

General Purpose Scanner

MAINTENANCE

Performance Test

Change step f-4 to read: MONITOR channel to 0.

Change step g. to read:

> Press the MONITOR switch in the SCAN CONTROL group and observe the displayed measurement data. Channel 0 should read 1.000V dc ±1%. Press the ADVANCE ADDRESS switch after each channel measurement is observed. A cumulative +0.1V dc decrease should appear at each of the remaining channels. Channel 9 should read 0.1V dc. Any deviation in this pattern indicates a defective PCB assembly.

Option -06

Low Level Scanner

MAINTENANCE

Performance Test

Change step f-4 to read: MONITOR channel to 0.

Change step g. to read:

> Press the MONITOR switch in the SCAN CONTROL group and observe the displayed measurement data. Channel 0 should read 1.000V dc ±1%. Press the ADVANCE ADDRESS switch after each channel measurement is observed. A cumulative +0.1V dc decrease should appear at each of the remaining channels. Channel 9 should read 0.1V dc. Any deviation in this pattern indicates a defective PCB assembly.

Section 8

Schematic Diagrams

TABLE OF CONTENTS

Under Figure 8-4, change A5 Printer Drive PCB Assembly (Sheet 1 of 2), 2200A-1007 to read: A5 Mode Switch Interface PCB Assembly, 2241B-1007.

Change Figure 8-1, System Cable Connections (2240A-1301) (Sheet 1 of 2) to agree with Figure 5.

Change Figure 8-1, System Cable Connections (2240A-1301) (Sheet 2 of 2) to agree with Figure 6.

Delete Figure 8-4, A5 Printer Drive PCB Assembly (2200A-1007) (Sheet 1 of 2) and replace with Figure 7.

Delete Figure 8-4, A5 Printer Drive PCB Assembly (2200A-1007) (Sheet 2 of 2) and replace with Figure 8.

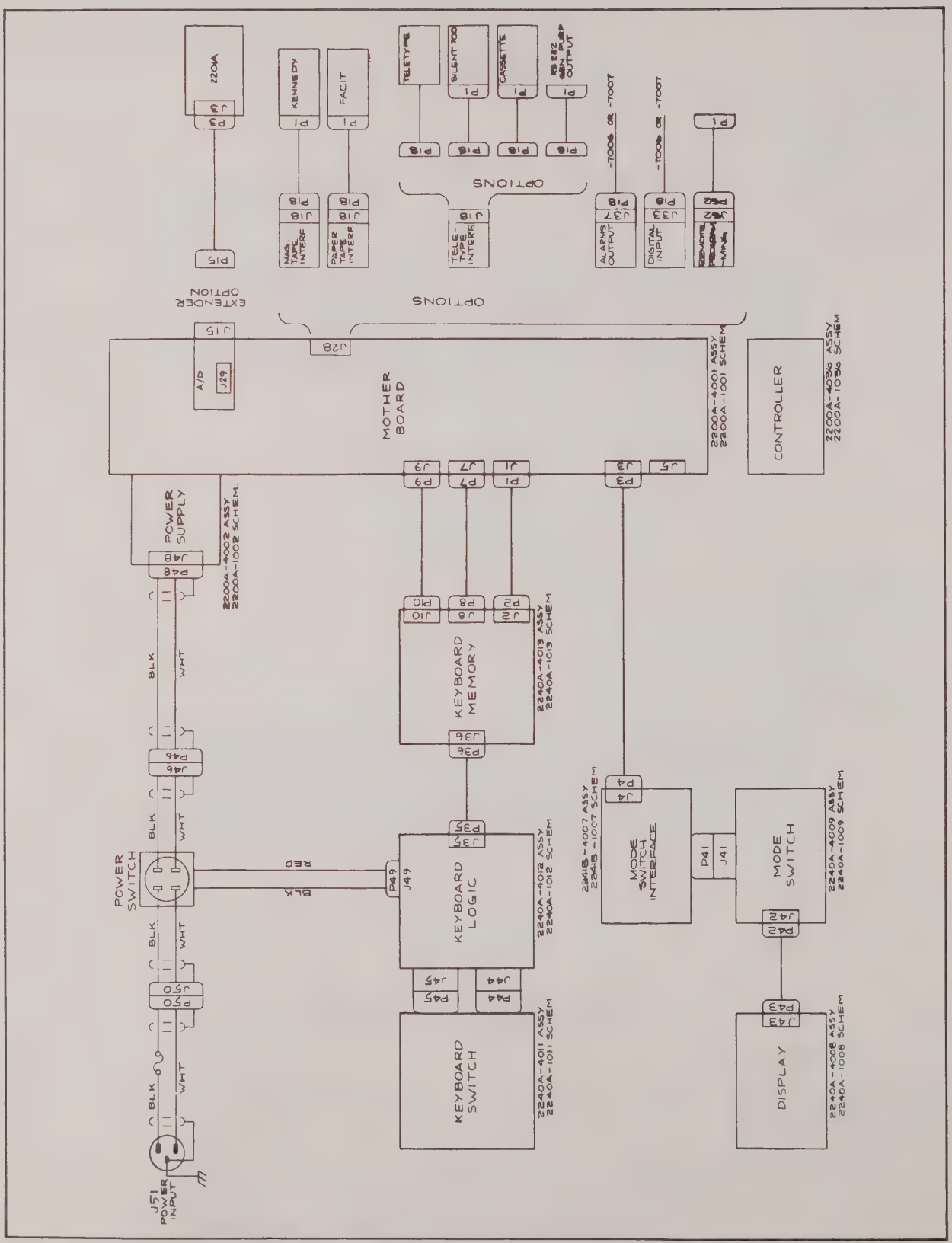

Figure 5. System Cable Connections (2241B-1301) (Sheet 1 of 2)

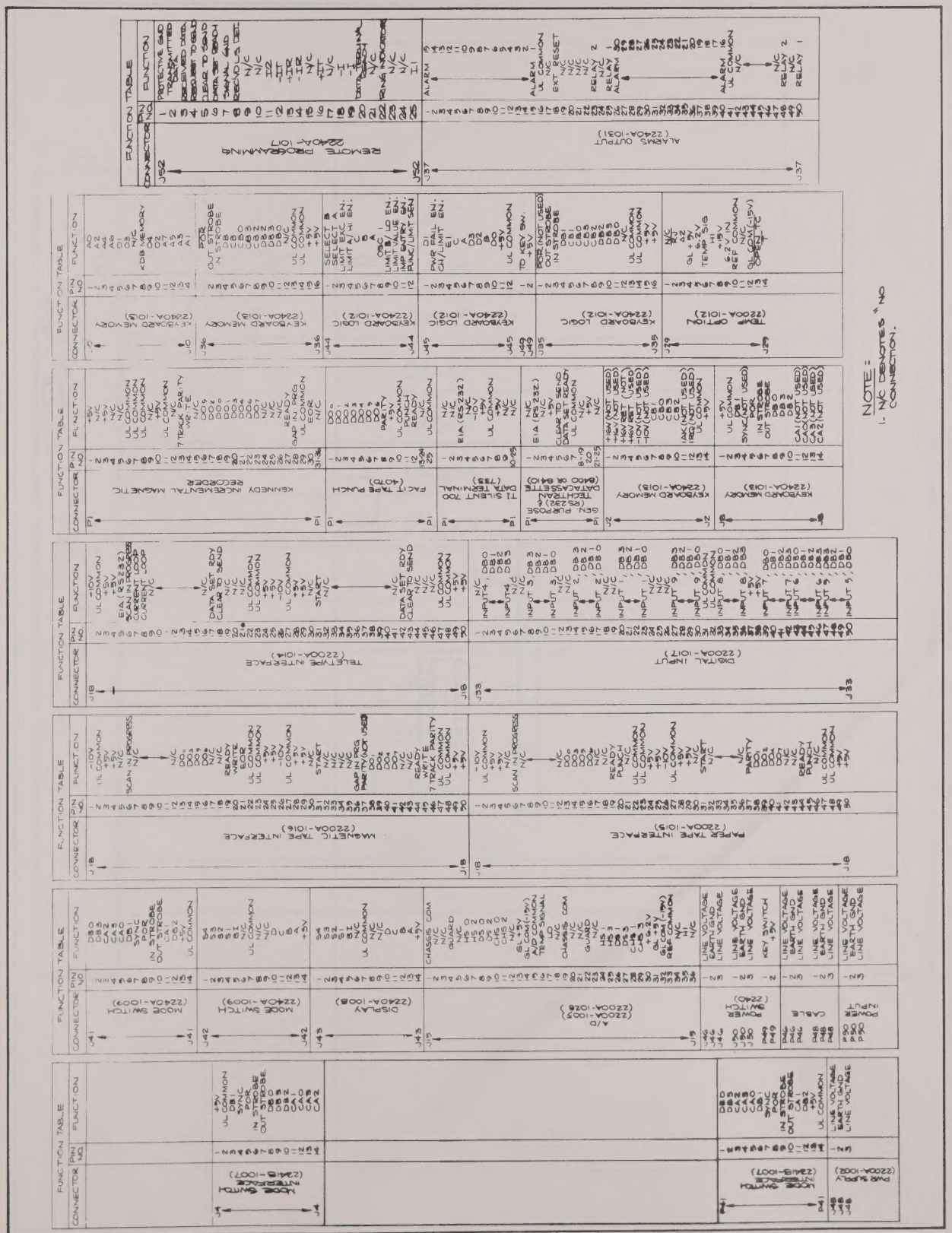

Figure 6. System Cable Connections (2241B-1301) (Sheet 2 of 2)

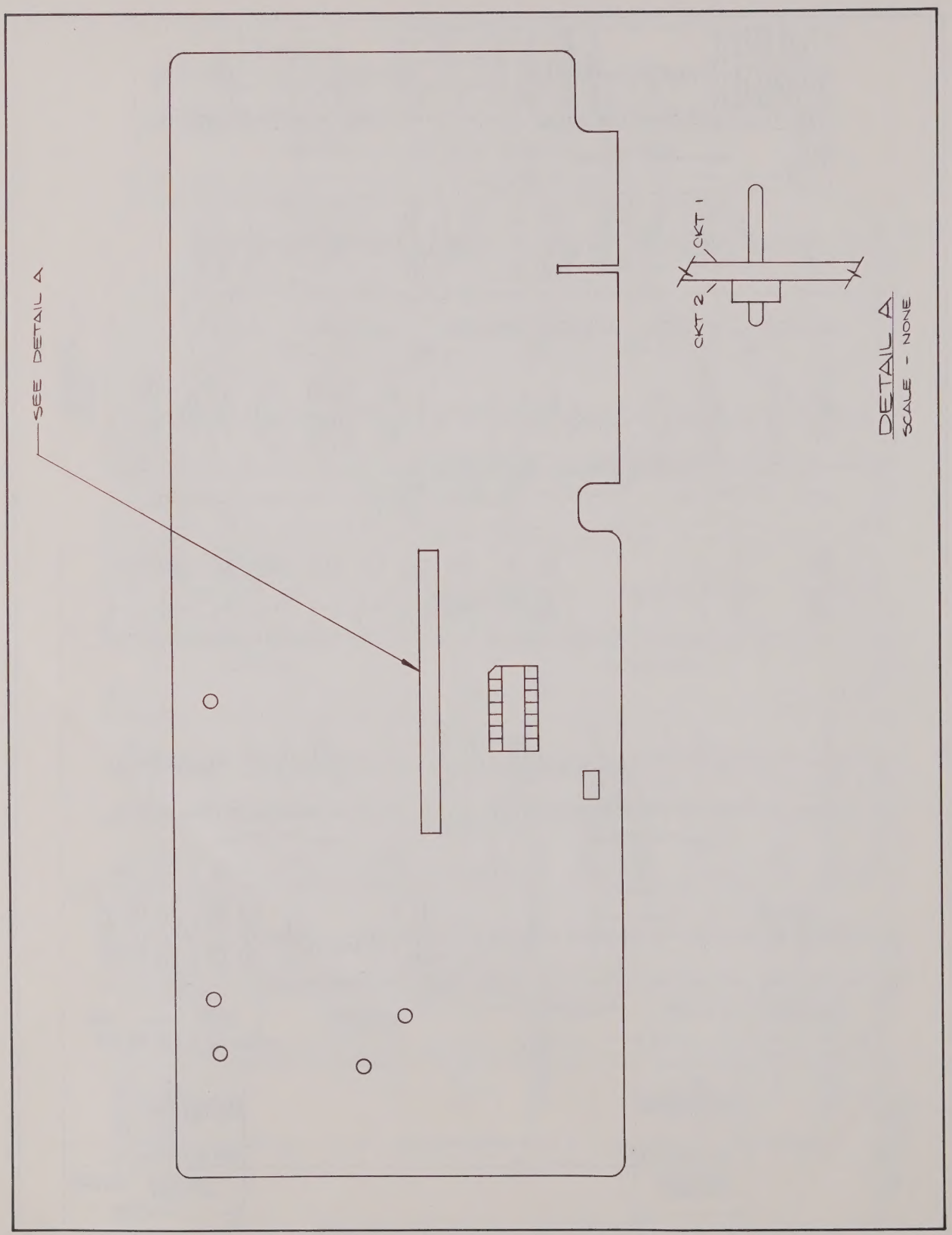

Figure 7. Mode Switch Interface PCB Assembly (2241B-4007)

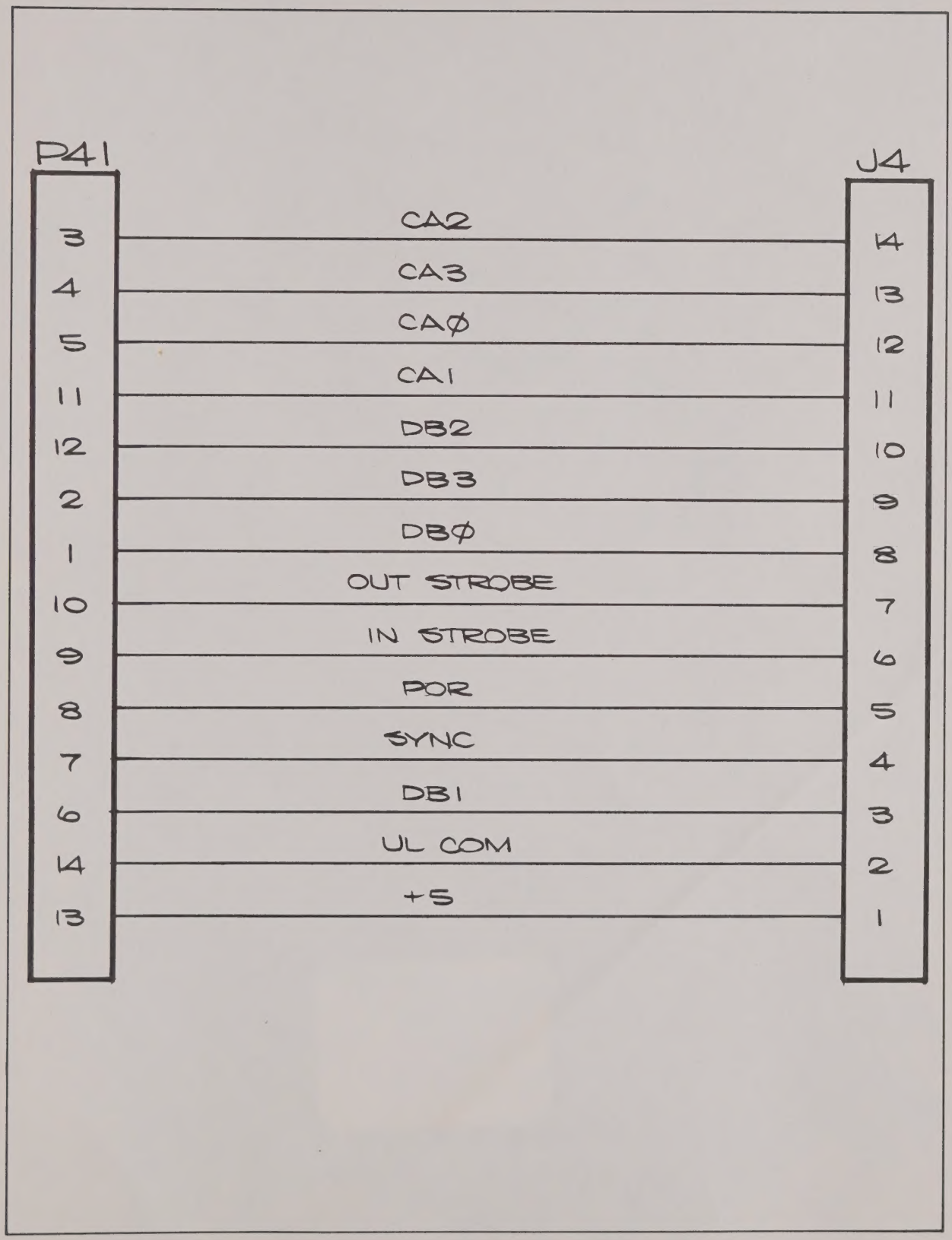

Figure 8. Mode Switch Interface PCB Assembly (2241B-1007)

www.manualsplus.com
1029282